

M/035/0002  
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 Div. of Oil, Gas & Mining

**Table 1 Storm Runoff Response Activities**

Updated: 13-Feb-2014

ID	Work Area	Work Scope	Completion Target	Status 02/13/2014	Comments
1A	Cutoff Walls	Restore water collection (expose cutoff walls, water collection boxes, clean debris from pipelines)	15-Oct-13	Completed	Initial step in the restoration process was to restore water collection to the cutoff walls, and clean collection boxes and pipelines to reestablish flow to the Eastside collection system.
2A	Upper Basin	Establish minimum 10-year/24-Hour storm capacity	1-Dec-13	Completed	URS provided 10yr 24hr event capacities for the affected basins in cubic yards. Material in excess of these volumes was removed from all the basins. An aerial survey conducted on the 24th of Nov. will be used to verify capacities.
2B	Upper Basin	Re-establish stormwater management capacity to pre-storm levels (See URS report, Feb 24, 2009 Hydrologic assessment of the South End Drainages)	TBD	In process	Processing of aerial flight data, conducted on Nov 24, is ongoing. Survey issues have delayed volume calculations. These issues were resolved on 2-11 and processing of data is occurring and 2ft contours will be generated. The 2ft contours will be used to calculate volumes to compare to the 2009 basin volumes. Once this is complete a determination what work needs to be completed on the basins in 2014 will be done. On 2/10/14 UDOGM visited Kennecott to view storm water controls on the basins that can report to Butterfield Creek.
2C	Upper Basin	Repair breaches in mine waste dump top berms	1-Nov-13	Completed	Visual survey of berms on top of dumps was conducted, areas of concerns were identified and corrective actions assigned. Corrective actions included grading and berm construction to keep stormwater from the mine from concentrating and running down faces of dumps.
3A	Debris Flow	Remove debris flow material	TBD	Completed	Debris flows down gradient of cut-off-walls were removed and placed up gradient of cut-off-walls in Copper Notch area.
3B	Debris Flow	Re-establish down gradient secondary containment to pre-storm levels (See URS report, Feb 24, 2009 Hydrologic Assessment of the South End Drainages)	1-Dec-13	Completed	All basins down gradient of cut-off-walls have been cleaned (Yosemite, Saints Rest and South Saints Rest). Culverts have been cleaned as needed and standpipes reinstalled with rock re-enforcement surrounding them.
3C	Debris Flow	Re-seed impacted areas	Fall 2014	Expected to be completed in Spring 2014	To date approximately 10 acres of disturbance will be re-seeded in the spring.



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4A	Stormwater Canals	Clean sediment from Upper Lined Canal	1-Dec-13	Completed	Visual inspection of canal occurred and areas impacted by flood debris were identified. These areas were cleaned in Dec. 2013.
4B	Stormwater Canals	Clean sediment from Lower Lined Canal	1-Dec-13	Completed	Visual inspection of canal occurred and areas impacted by flood debris were identified. These areas were cleaned in Dec. 2013.
5A	Butterfield Creek	Map and sample mine waste sediment deposition in riparian areas	1-Nov-13	Completed	In addition to the sediment sampling completed in September, continued weekly samples are collected from Butterfield Creek water. The past month's data for sample site at the Horse/Burro gate indicate clean water and it is available for irrigation purposes. Lead and arsenic concentration measured as Total are less than detection limit.
5B	Butterfield Creek	Evaluate options for management of mine waste material in riparian areas	15-Dec-13	Completed	Addressed in State DNR Steam Alteration as received by DNR on Nov. 22, 2013.
5C	Butterfield Creek	Secure regulatory approvals, as necessary, for riparian area response	ASAP	Acquired 11/15/2013	Approval was received from the USACOE on Nov. 15, 2013. USACOE has numerous criteria that KUC must meet and this criteria was listed and Work Plan was attached. Once this information was provided by Kennecott, then USACOE did not require a permit and the conditions criteria could be passed to DNR. See comments 5B
5D	Butterfield Creek	Implement riparian area response, as necessary	TBD	In process	Riparian work will proceed after removal work is done. Weather has delayed sediment removal work and riparian response will likely be completed next spring and the DNR permit will guide process.
5E	Butterfield Creek	Work area assessments	NA	Occurring	Weekly inspections are being conducted to evaluate the potential to resume clean up activities. Currently conditions prohibit the work activities from resuming due to varying conditions (ice, snow, mud, etc.). Questar is currently working on a gas line crossing of Butterfield Creek on land owned by Kennecott. They have told us that they have appropriate permits in place for this work.
6A	Third Party	Identify and map possible mine waste sediment deposition on third party properties	15-Oct-13	Completed	Within a week after the mine sediment deposition, all third parties mapped.
6B	Third Party	Sample possible mine waste sediment on third party properties	1-Nov-13	Completed	Within a week after the mine sediment deposition, all third parties were sampled.



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6C	Third Party	Determine appropriate response actions for third parties through discussions with third parties	TBD	In process, see comments	Appropriate response action agreement is completed with two of the five third party groups. Response action is pending with three of the five third party groups.
6D	Third Party	Implement third party property response actions	TBD	In process, see comments	There are five third party groups with two of the five completed and field work completed. Access agreements and response actions are pending with the other three. Work will resume with better weather.
6E	Third Party	Work area assessments	NA	Occurring	Weekly inspections are being conducted to evaluate the potential to resume clean up activities. Currently conditions prohibit the work activities from resuming due to varying conditions (ice, snow, mud, frozen ground etc.).

TBD = To Be Determined

ASAP = As Soon As Possible

NA = Not Applicable